

FIG. 1 FTIR SPECTRA OF SILOXANE SOG COATED WAFERS

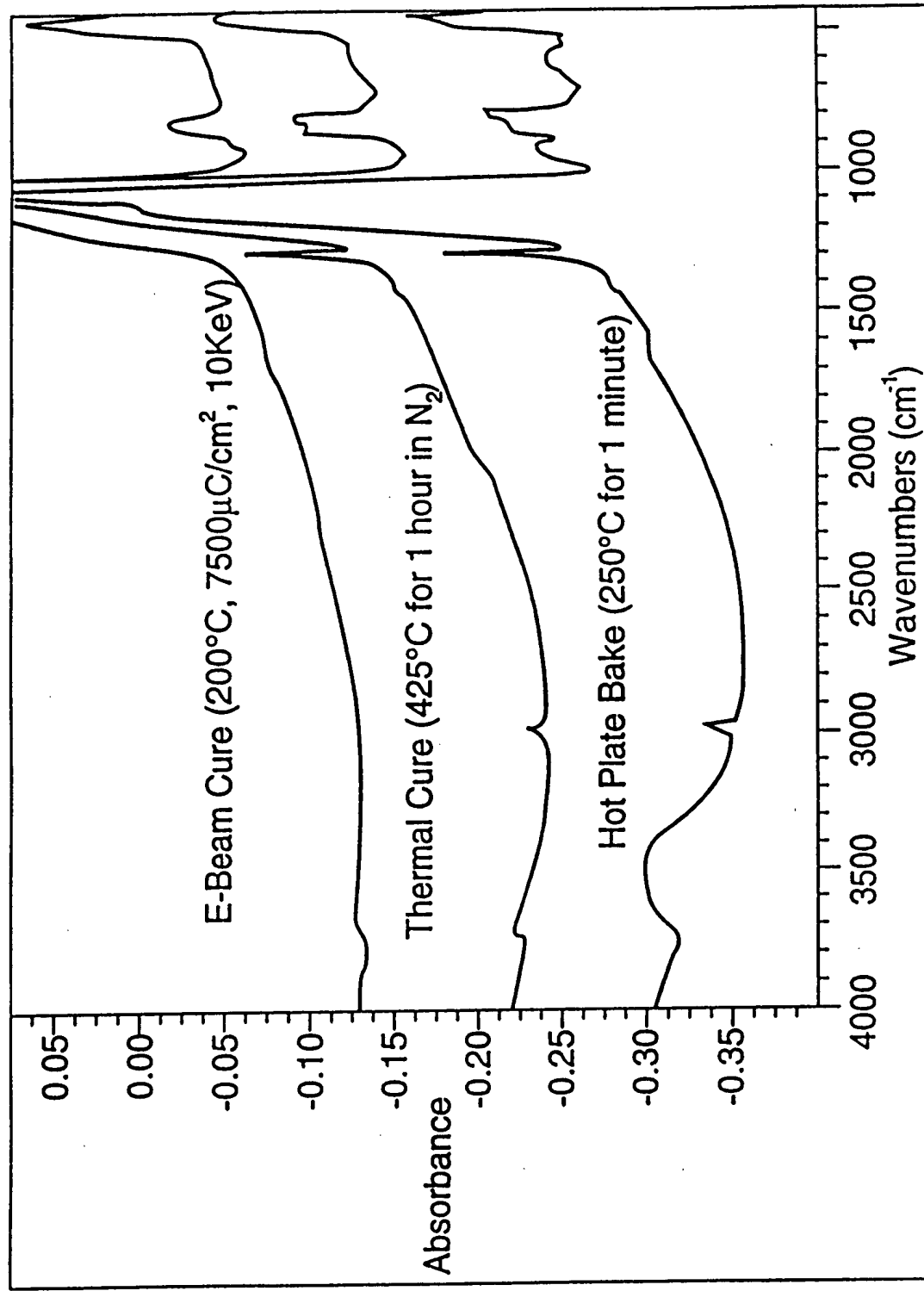


FIG. 2(a) FTIR Spectra of Electron Beam Cured Siloxane SOG Wafers (10KeV, Ar)

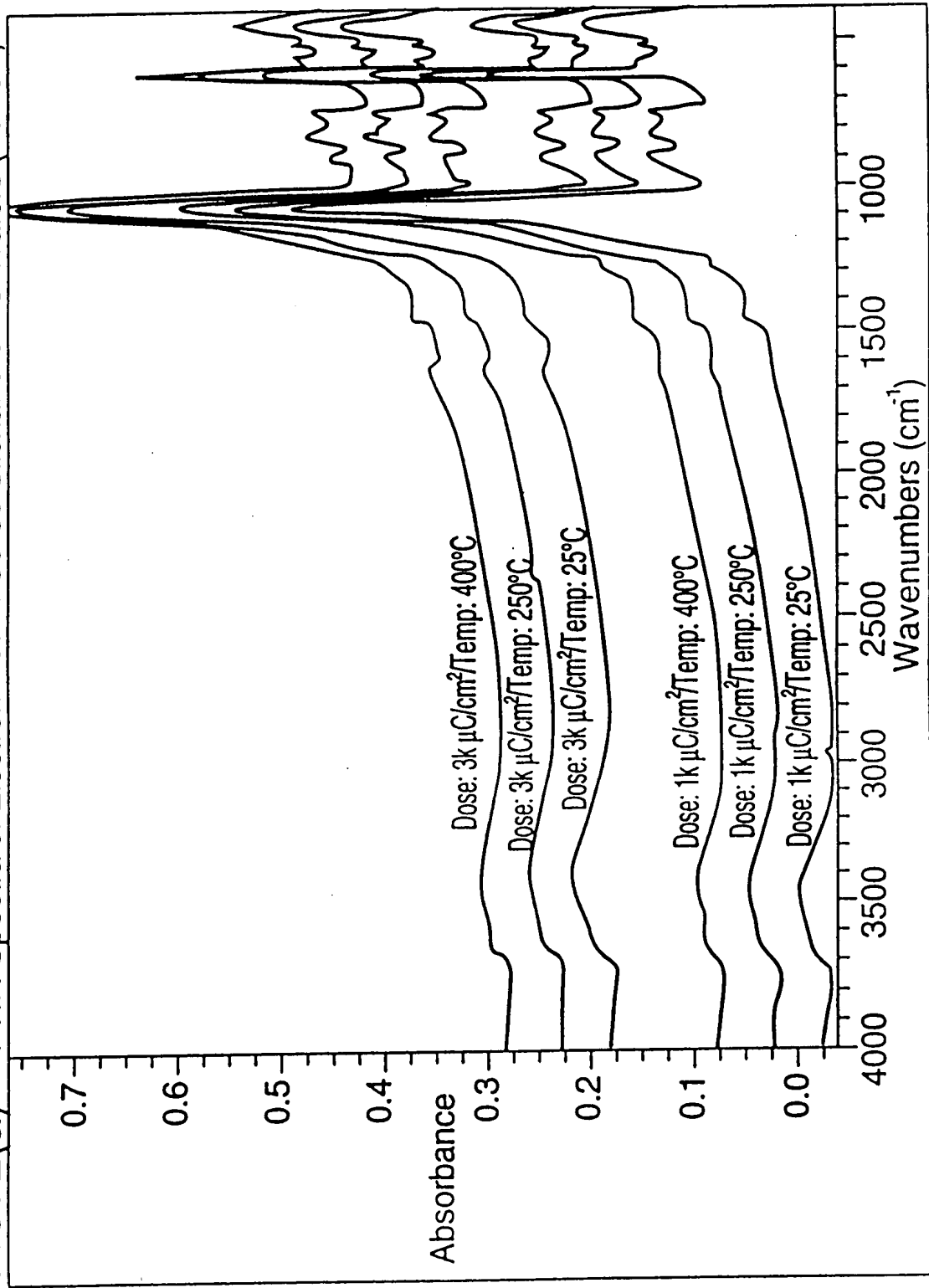
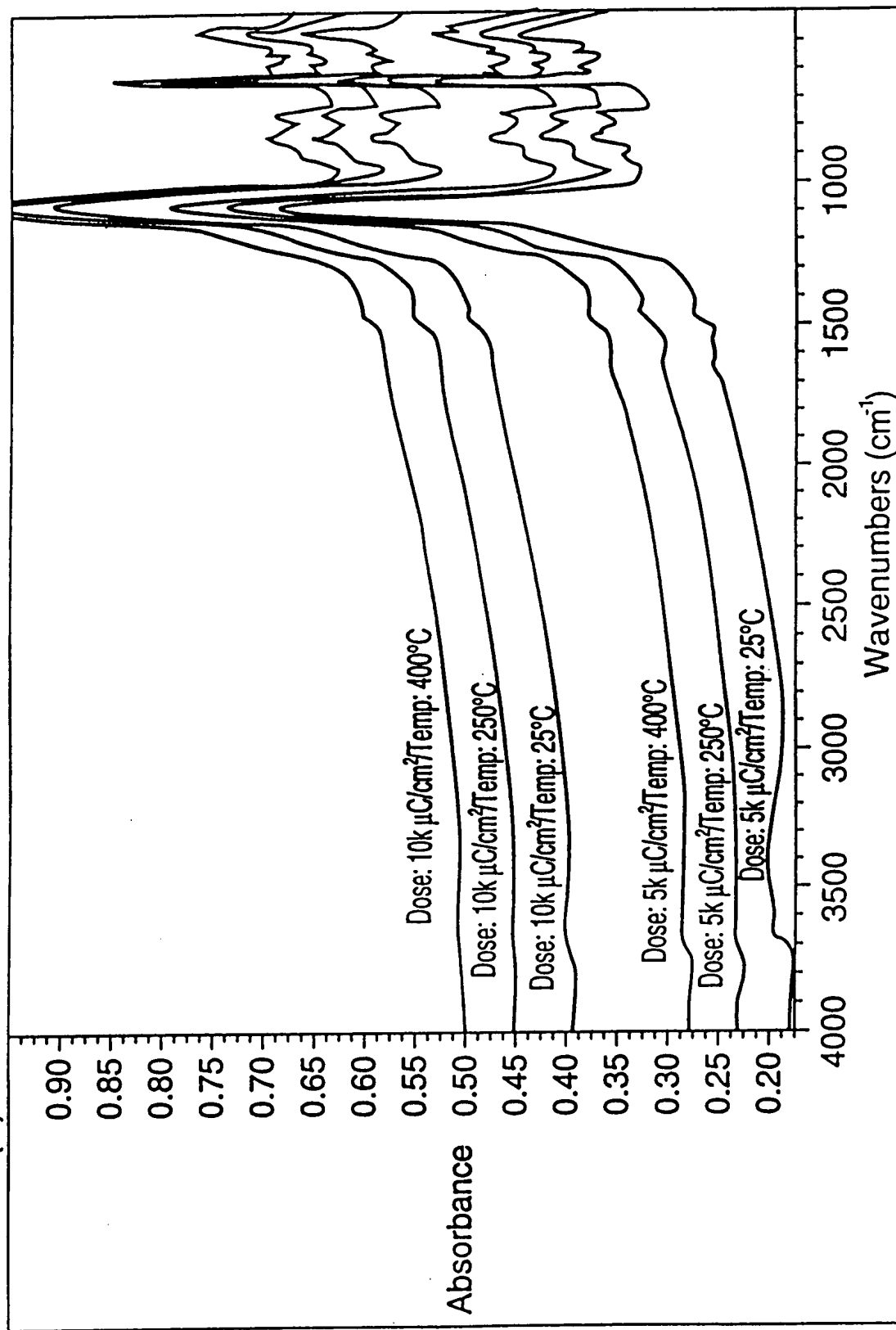


FIG. 2(b) FTIR Spectra of Electron Beam Cured Siloxane SOG Wafers (10 KeV, Ar)



**FIG. 3** Film Shrinkage versus Electron Beam Dose at Energy of 10 KeV for Siloxane SOG Coated Wafers

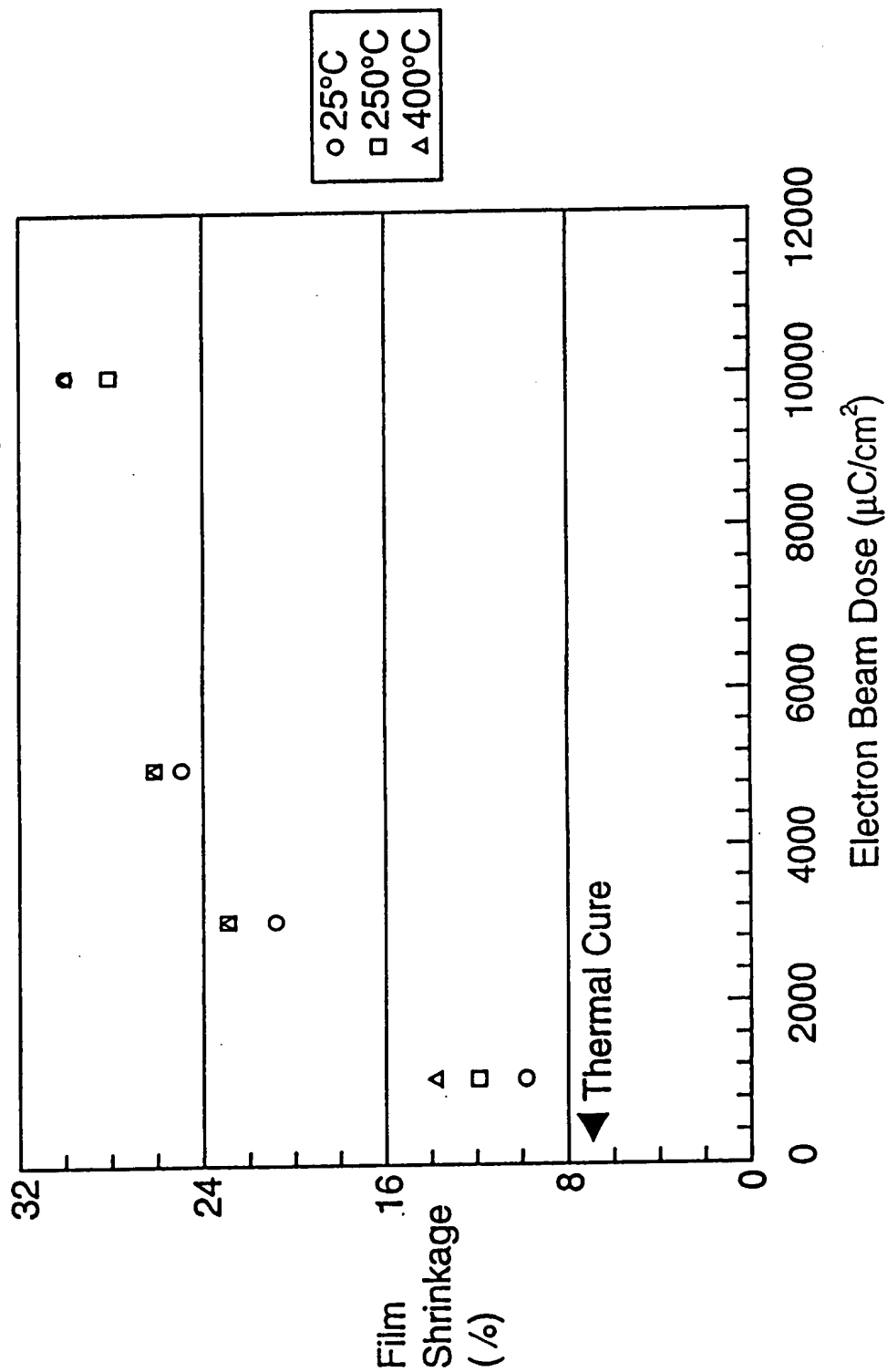


FIG. 4 Film Shrinkage versus Electron Beam Energy

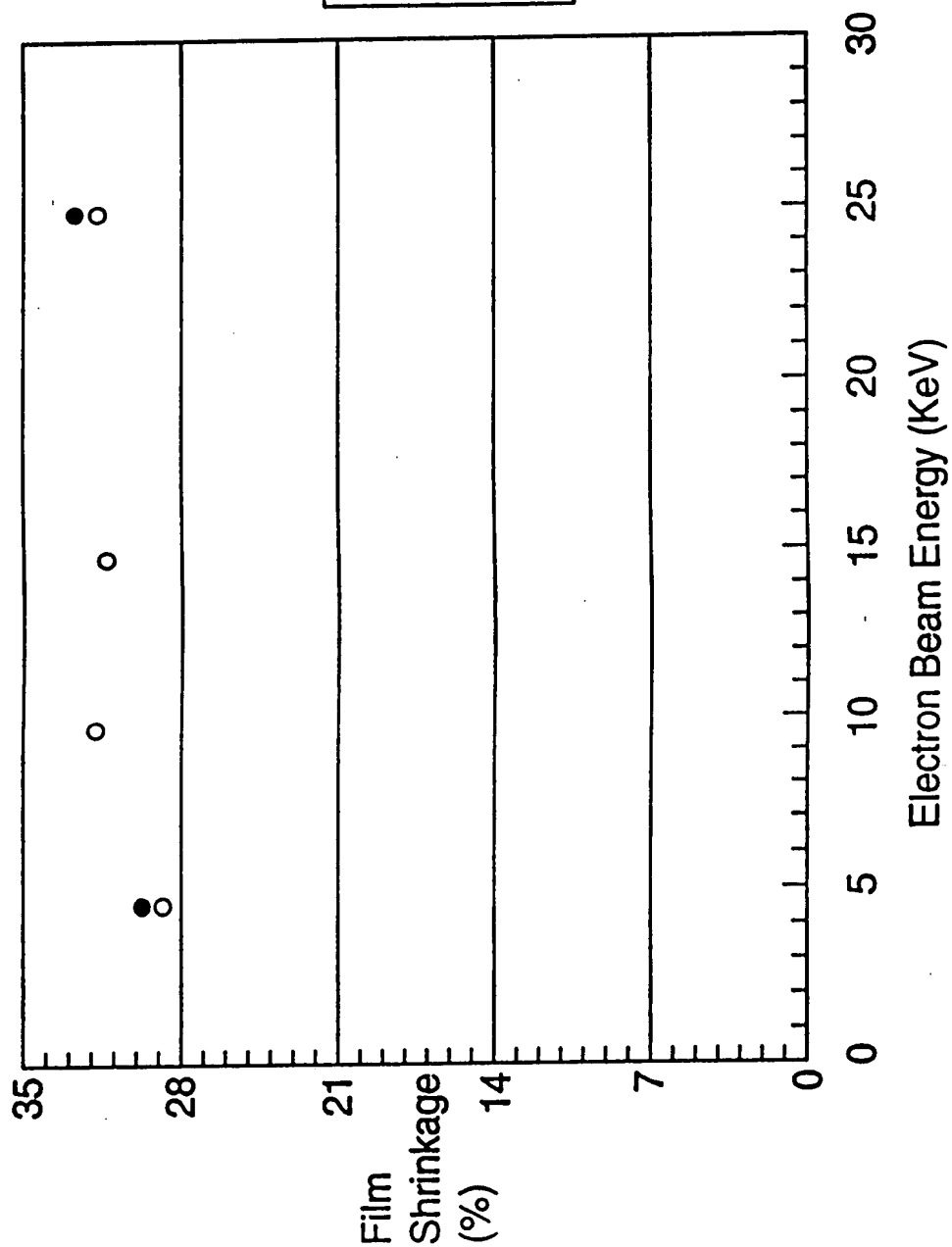


FIG. 5 Wet Etch Rate versus Electron Beam Dose

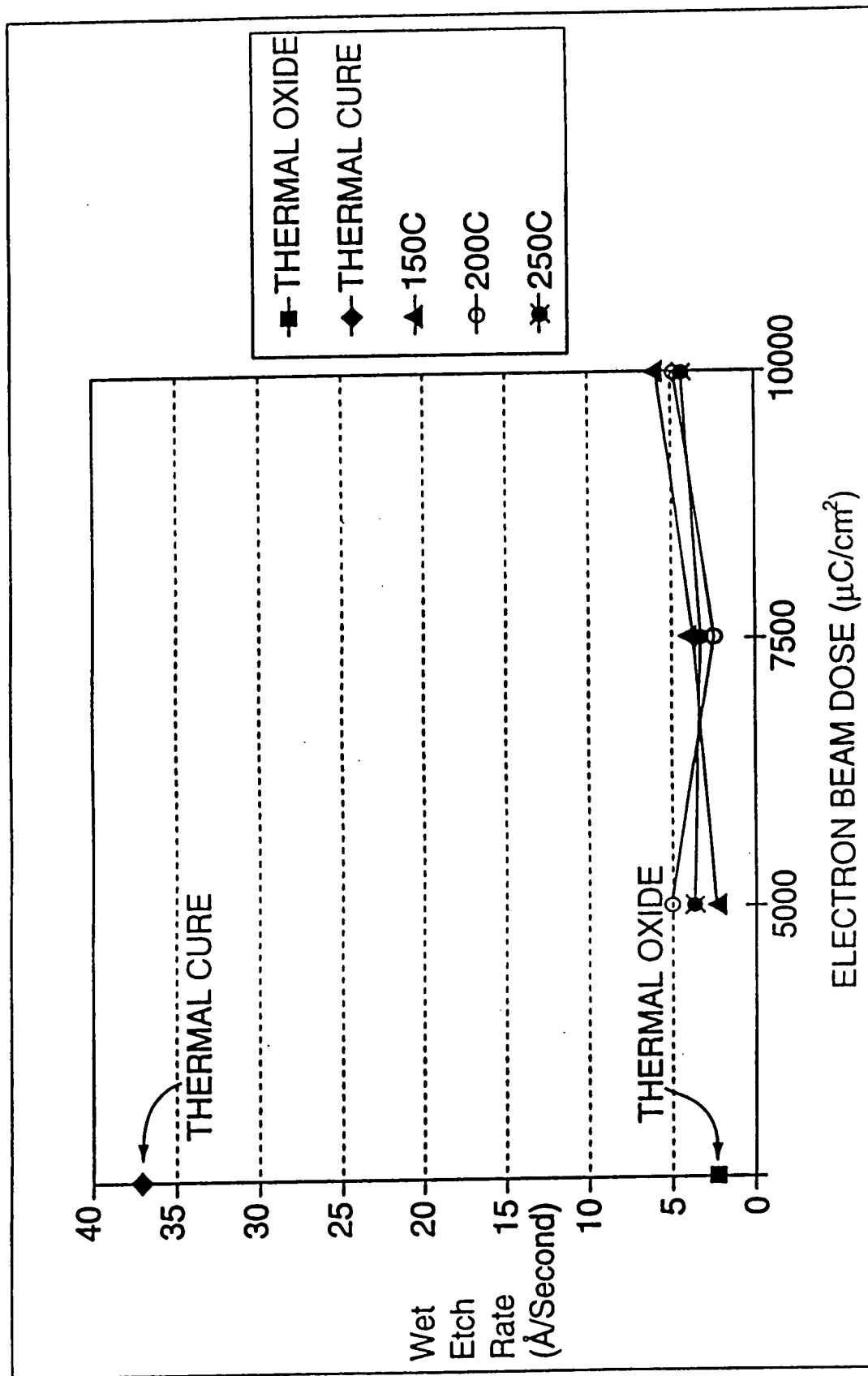


FIG. 6(a) Wet Etch Rate at Dose of  $1000 \mu\text{C}/\text{cm}^2$

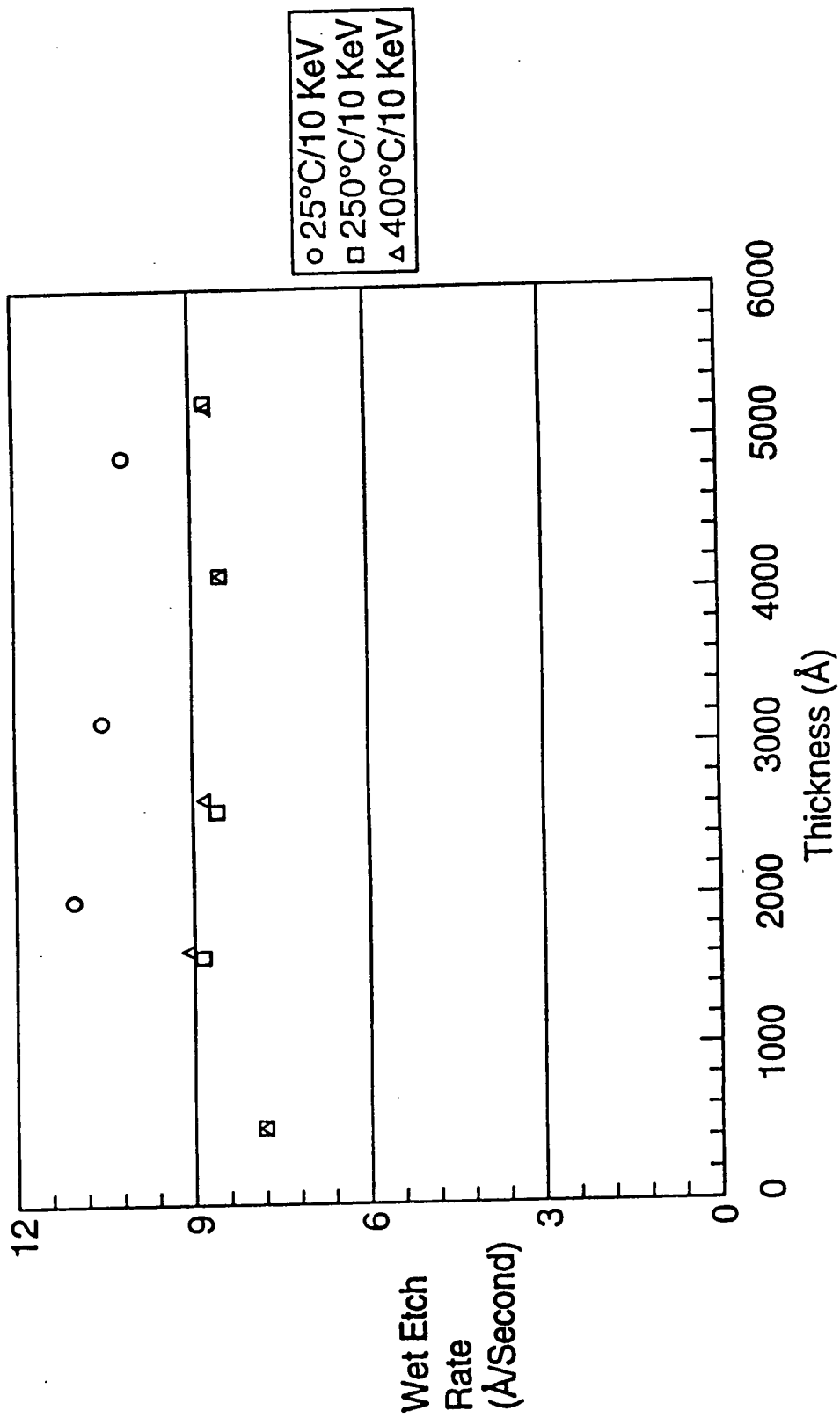


FIG. 6(b) Wet Etch Rate at Dose of 3000  $\mu\text{C}/\text{cm}^2$

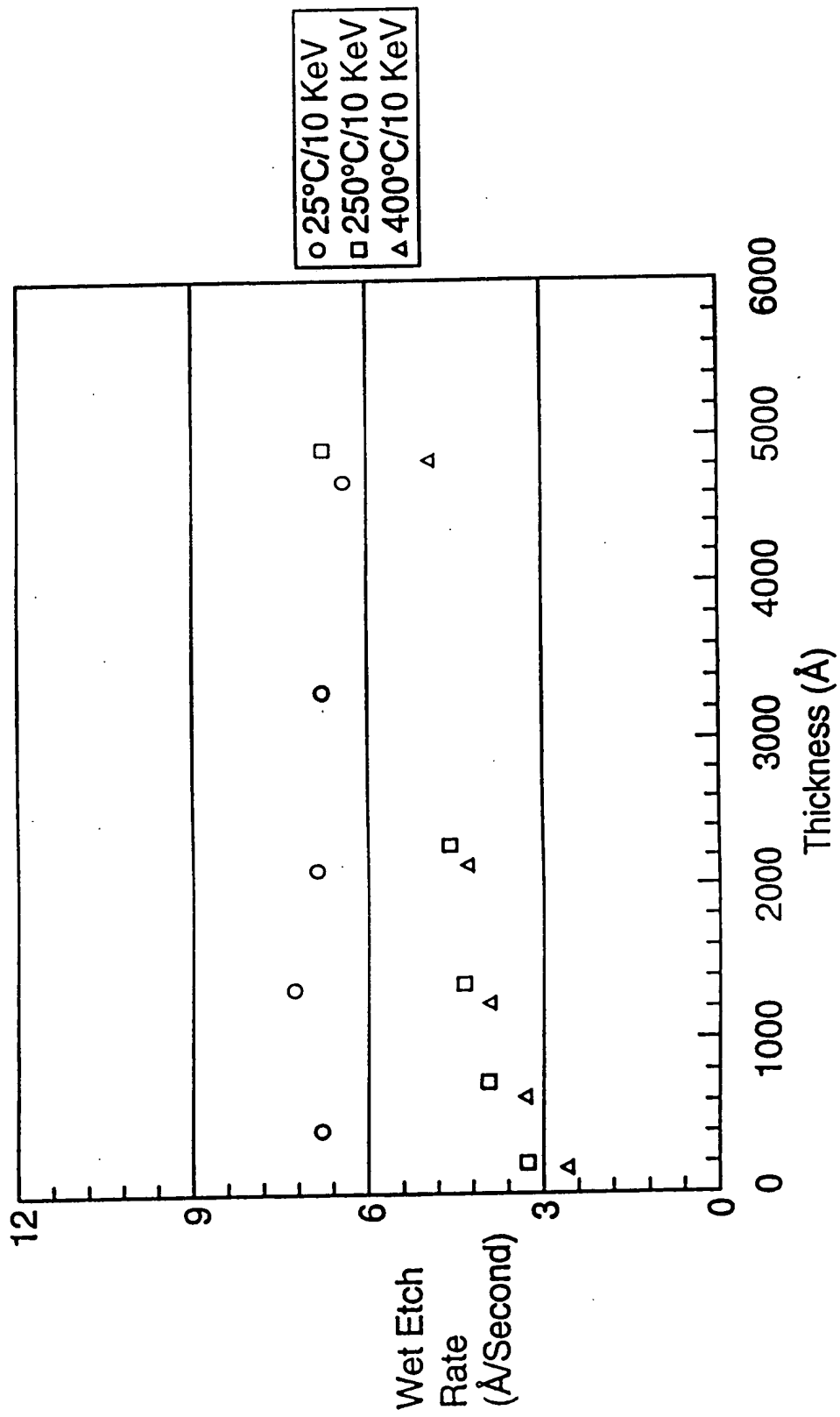




FIG. 6(c) Wet Etch Rate at Dose of 5000  $\mu\text{C}/\text{cm}^2$

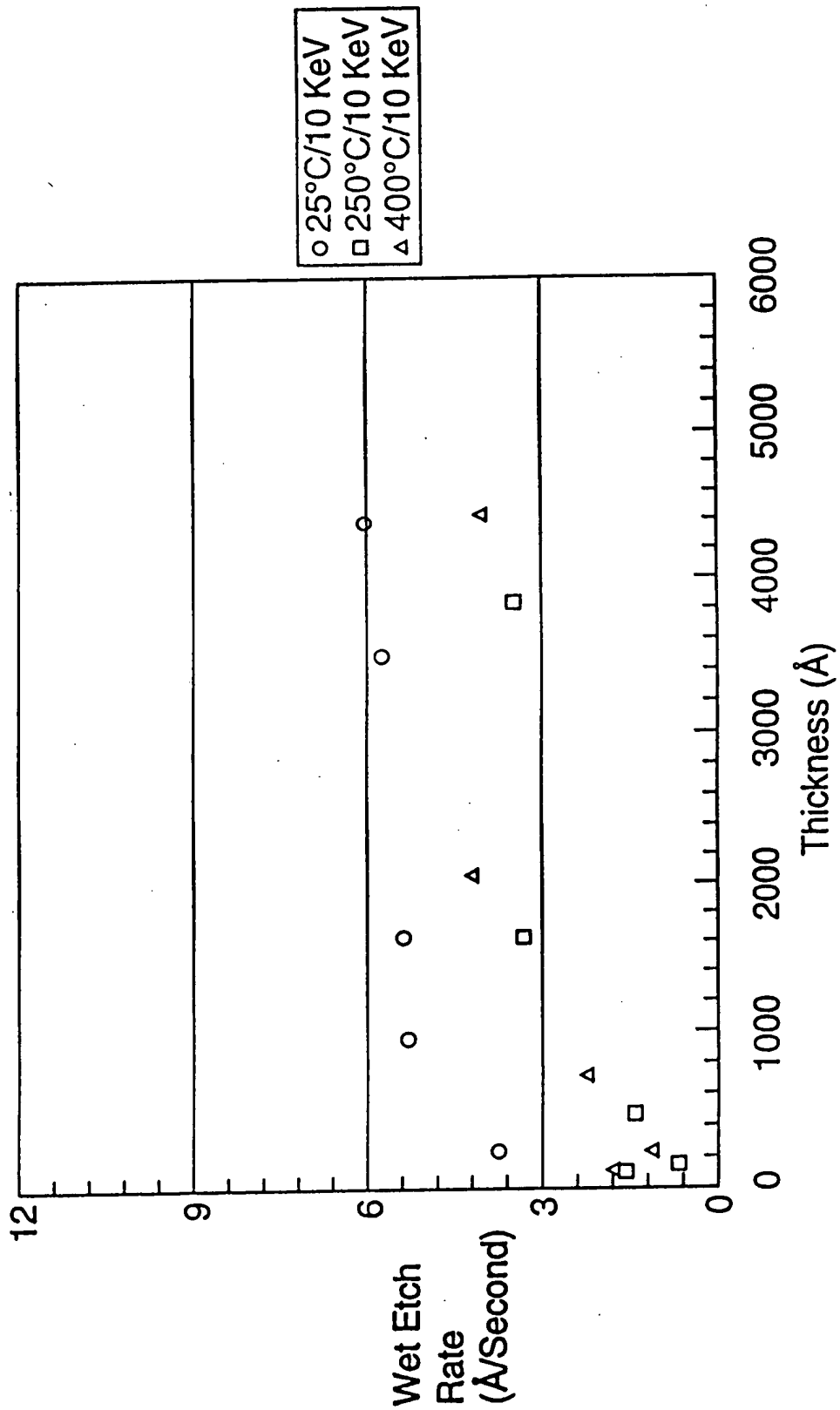


FIG. 6(d) Wet Etch Rate at Dose of 10000  $\mu\text{C}/\text{cm}^2$

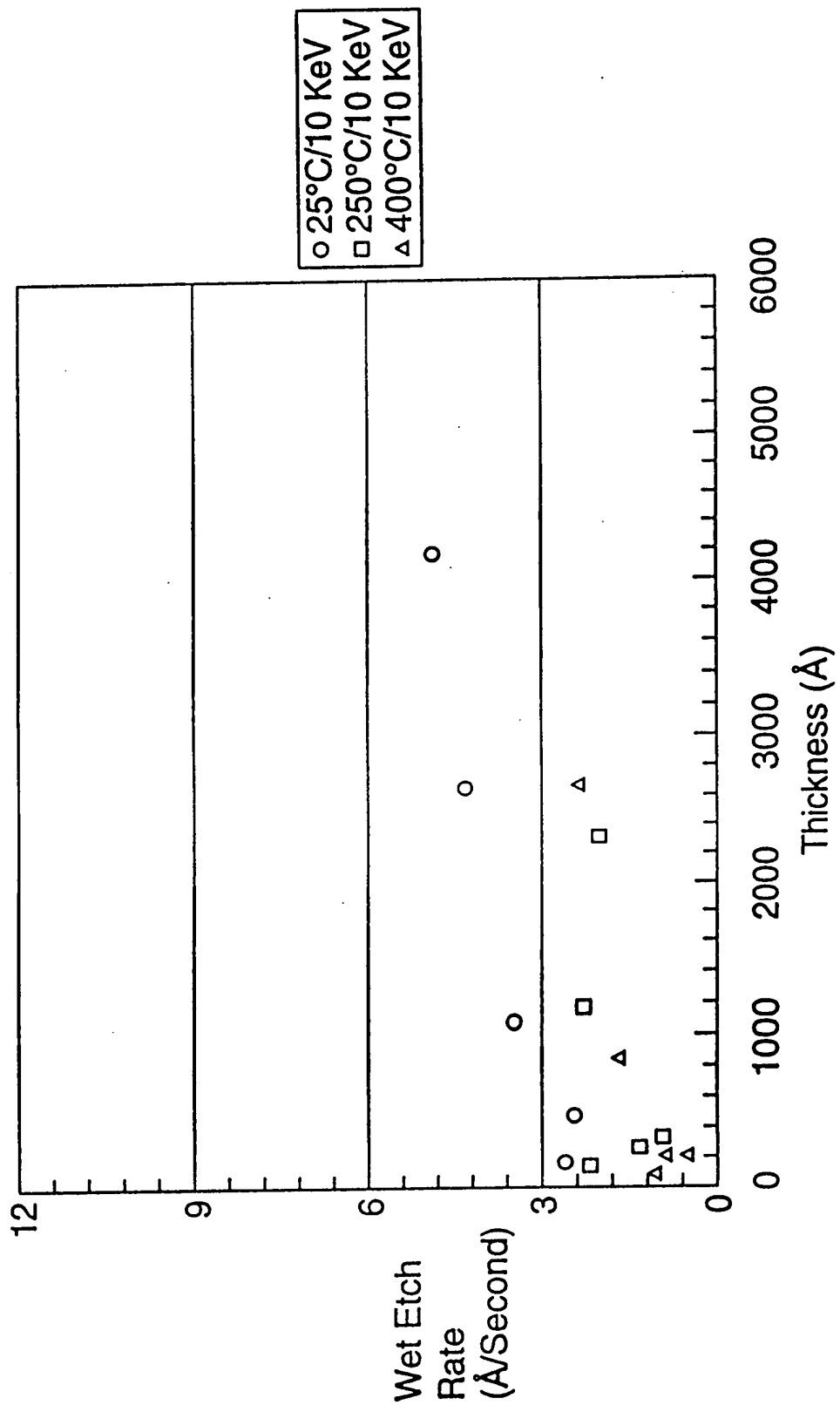
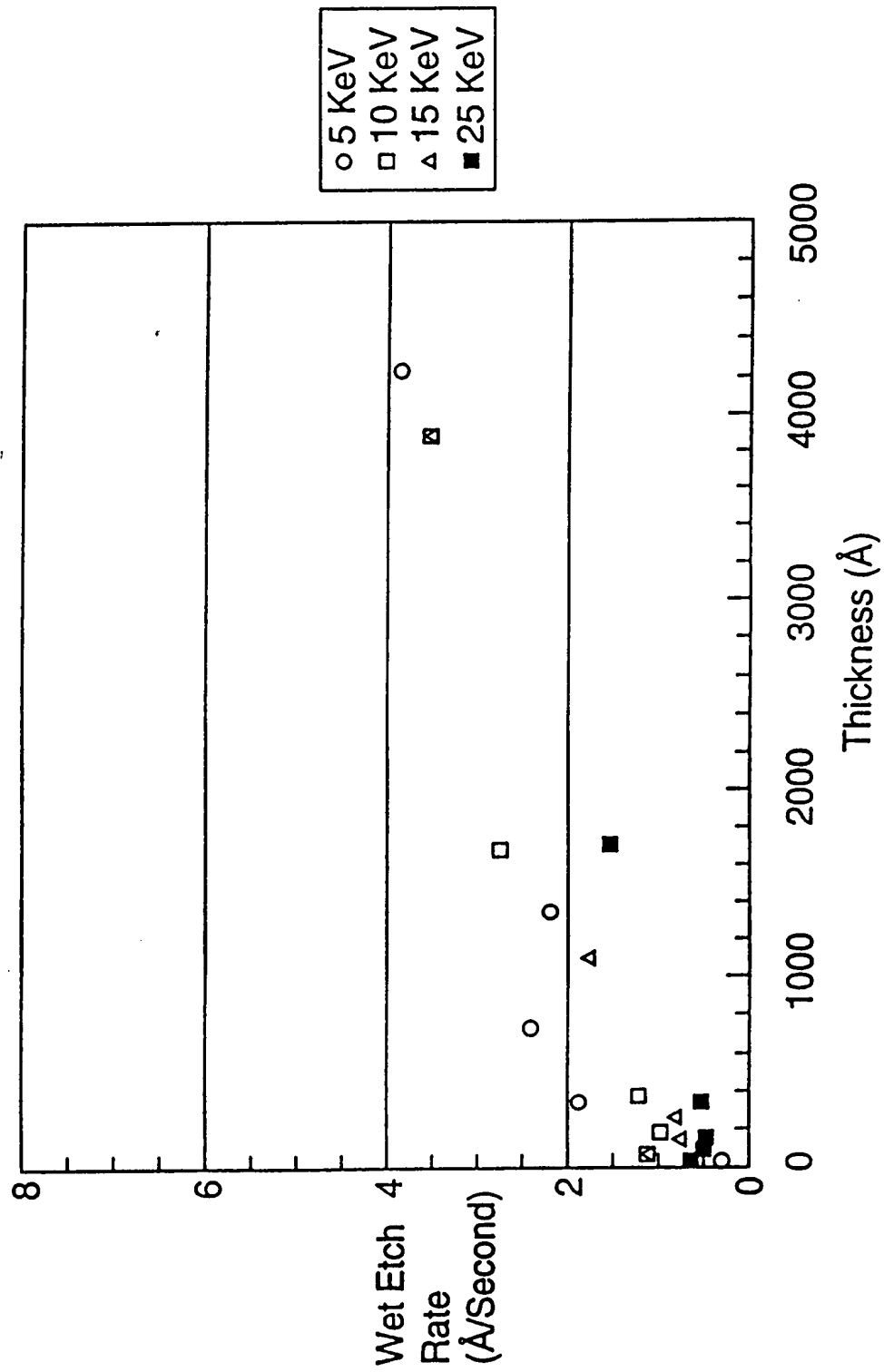


FIG. 7 Wet Etch Rate at Variable Electron Energy  
(Dose:  $10000 \mu\text{C}/\text{cm}^2$ ; Temperature:  $400^\circ\text{C}$ )



FTIR Spectra for Electron Beam Cured SOG Coated Wafers at Different Stages of Processing (Dose: 10000  $\mu\text{C}/\text{cm}^2$ , Temperature: 200°C,  $\text{N}_2$ )

FIG. 8

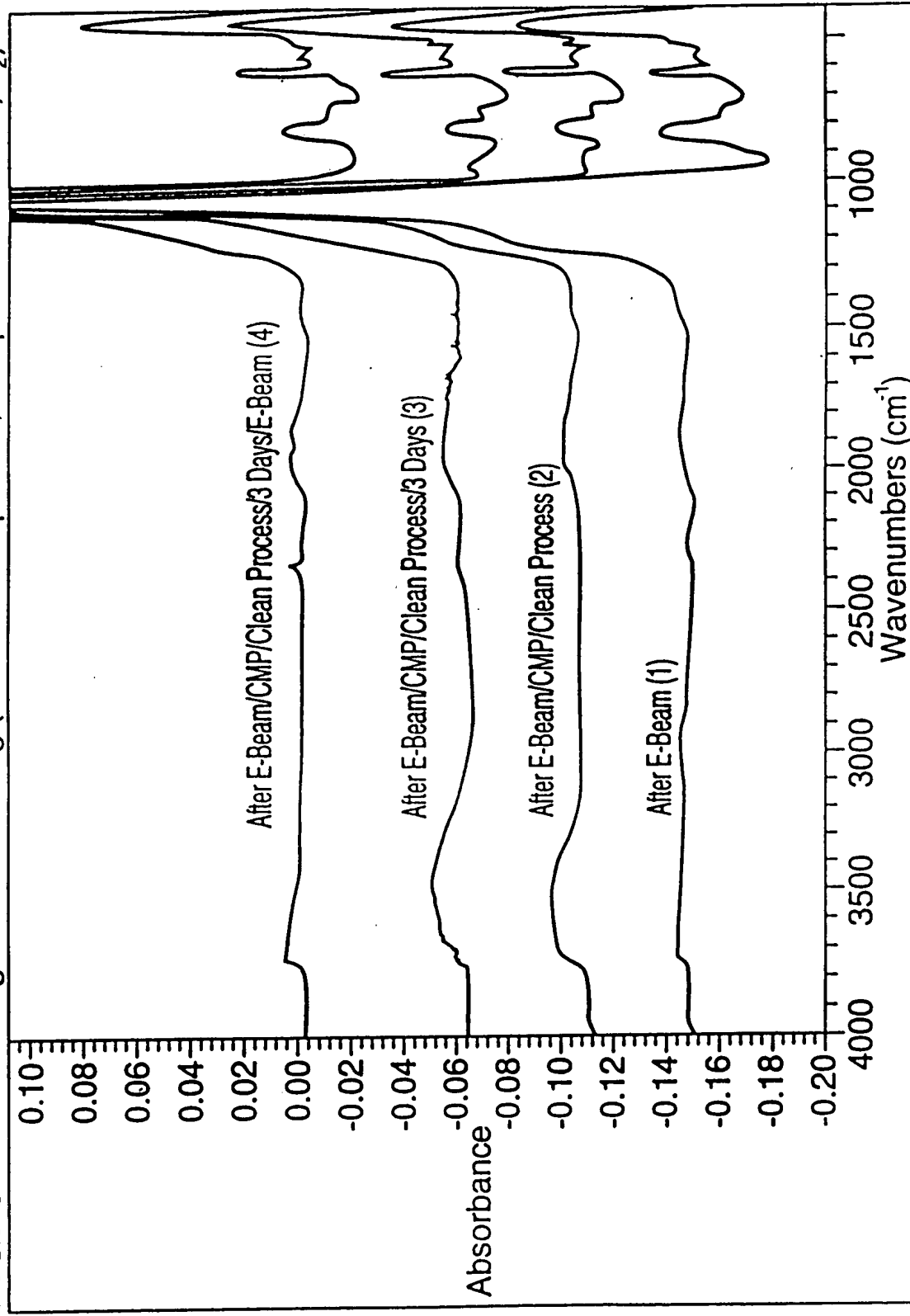
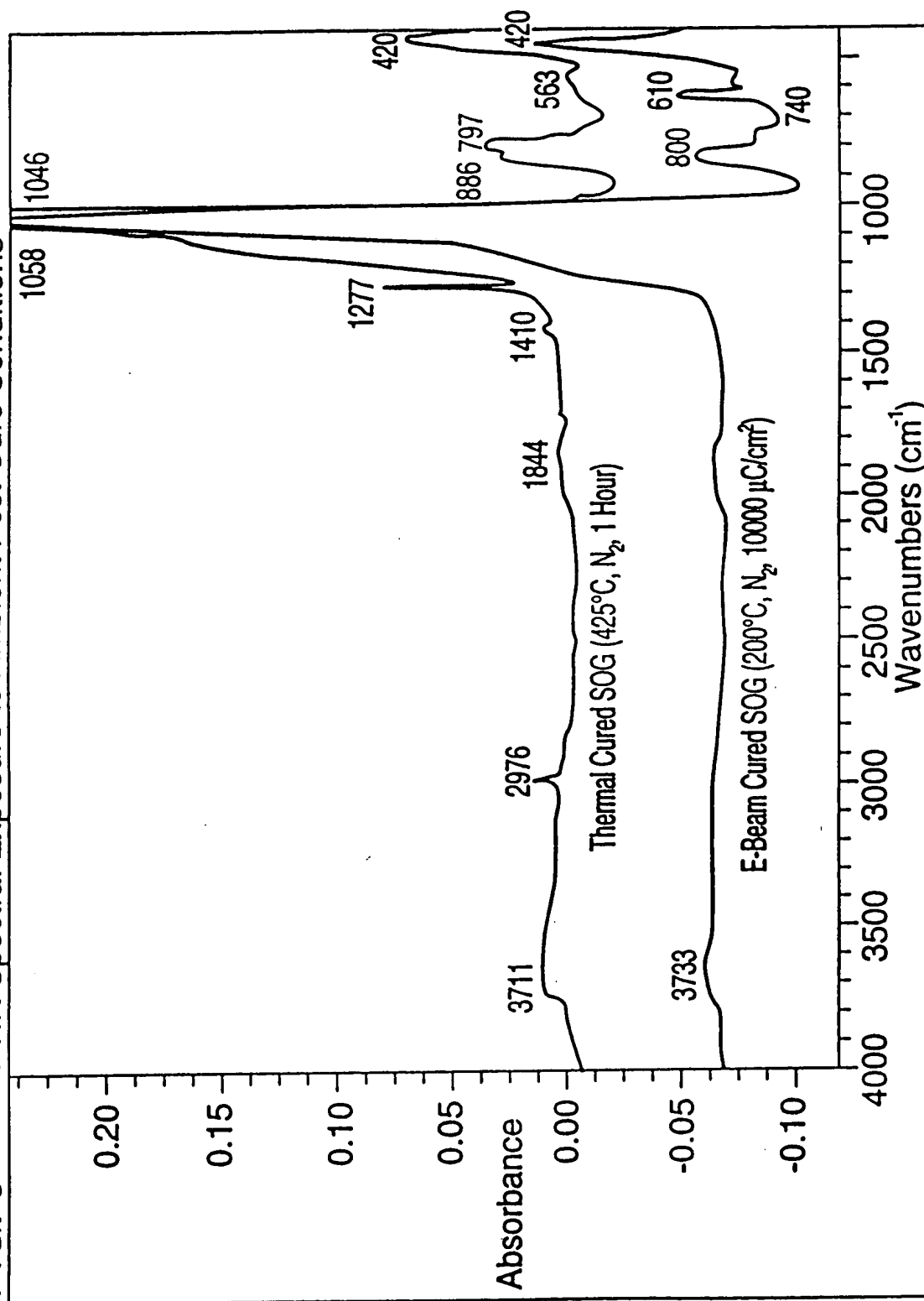


FIG. 9 FTIR Spectra: Exposure to Ambient Post-Cure Conditions



FTIR Spectra for SOG Coated Wafers after  
Electron Beam Cure (10000  $\mu\text{C}/\text{cm}^2$ , 400°C, Ar)

FIG. 10(a)

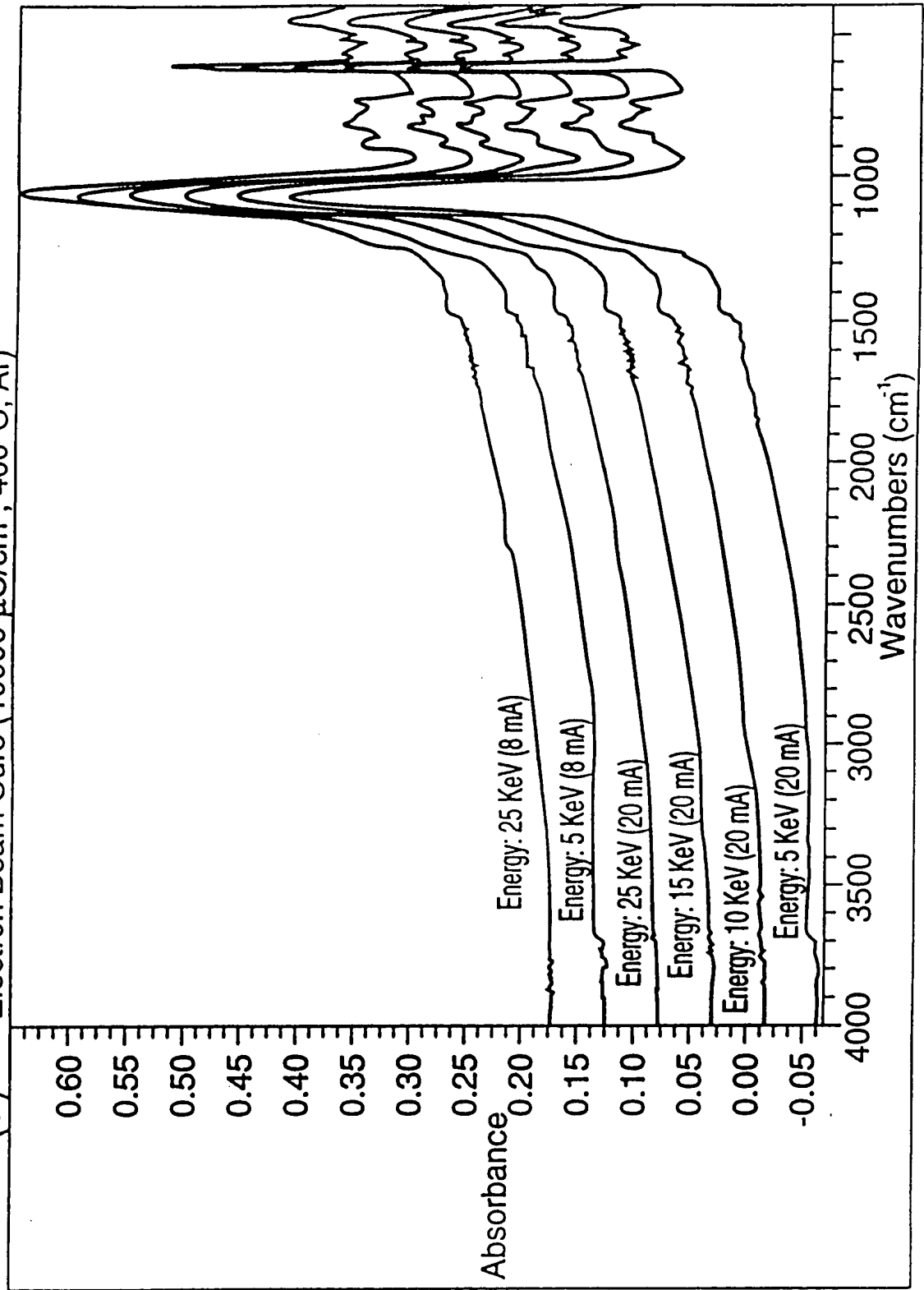


FIG. 10(b) FTIR Spectra for SOG Coated Wafers after Electron Beam Cure (10000  $\mu\text{C}/\text{cm}^2$ , 400°C, Ar) Followed by Immersion in Water for 1 Hour

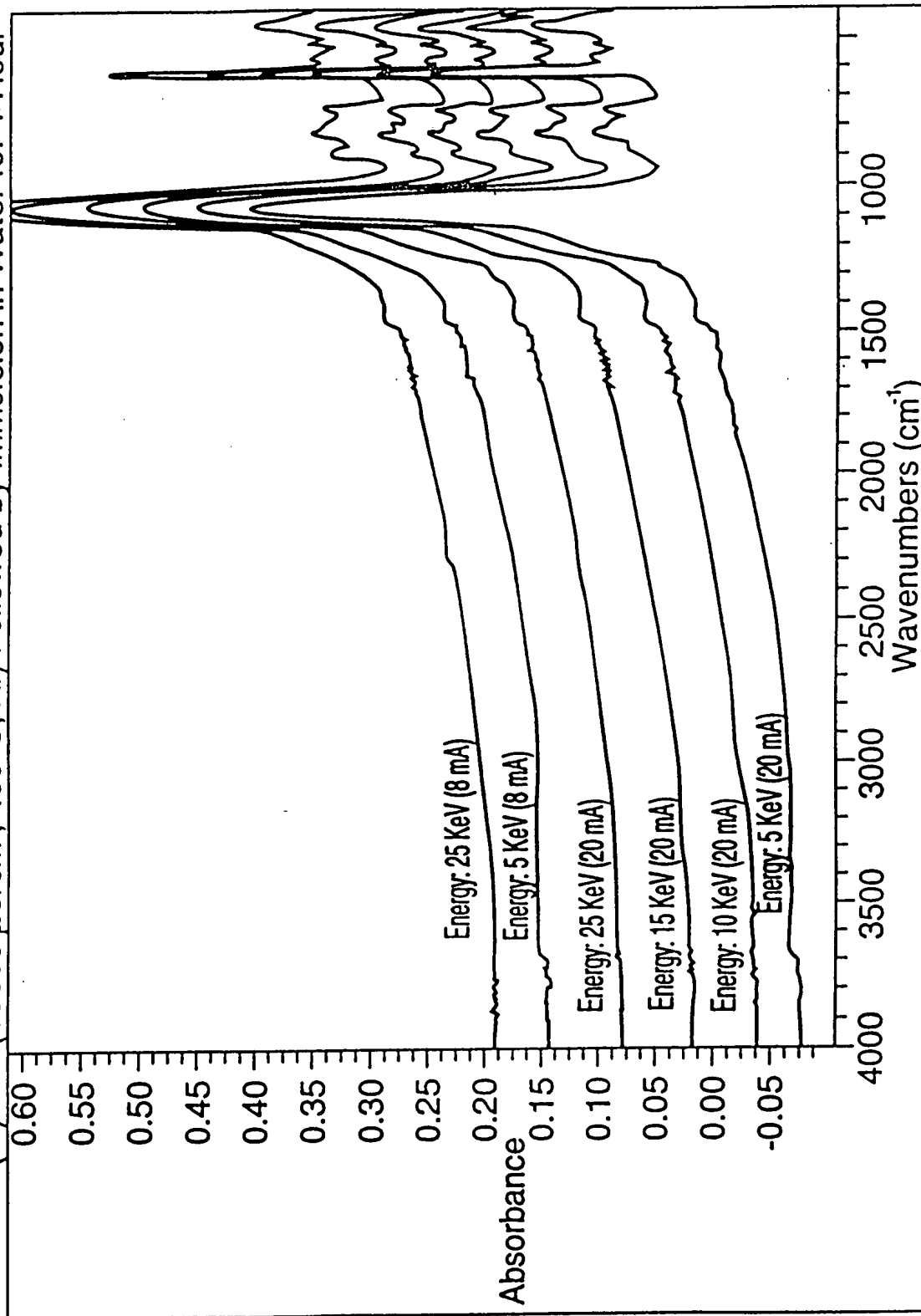
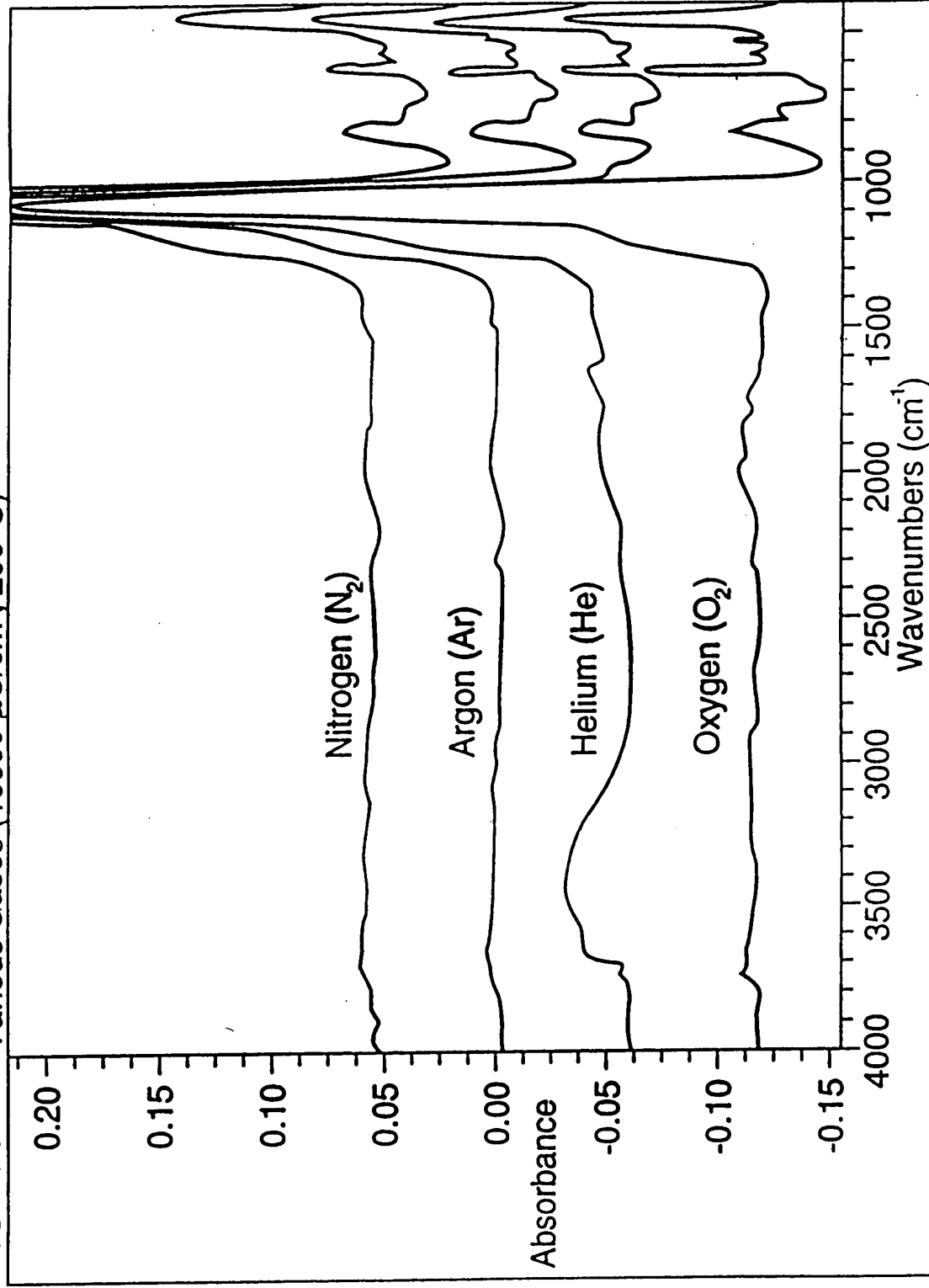


FIG. 11 SOG Coated Wafers Cured with Electron Beams in the Presence of Various Gases (10000  $\mu\text{C}/\text{cm}^2$ , 200°C)





**FIG. 12**

**QBD of Gate Oxide with TEOS Dielectric  
and E-Beam Cured SOG**

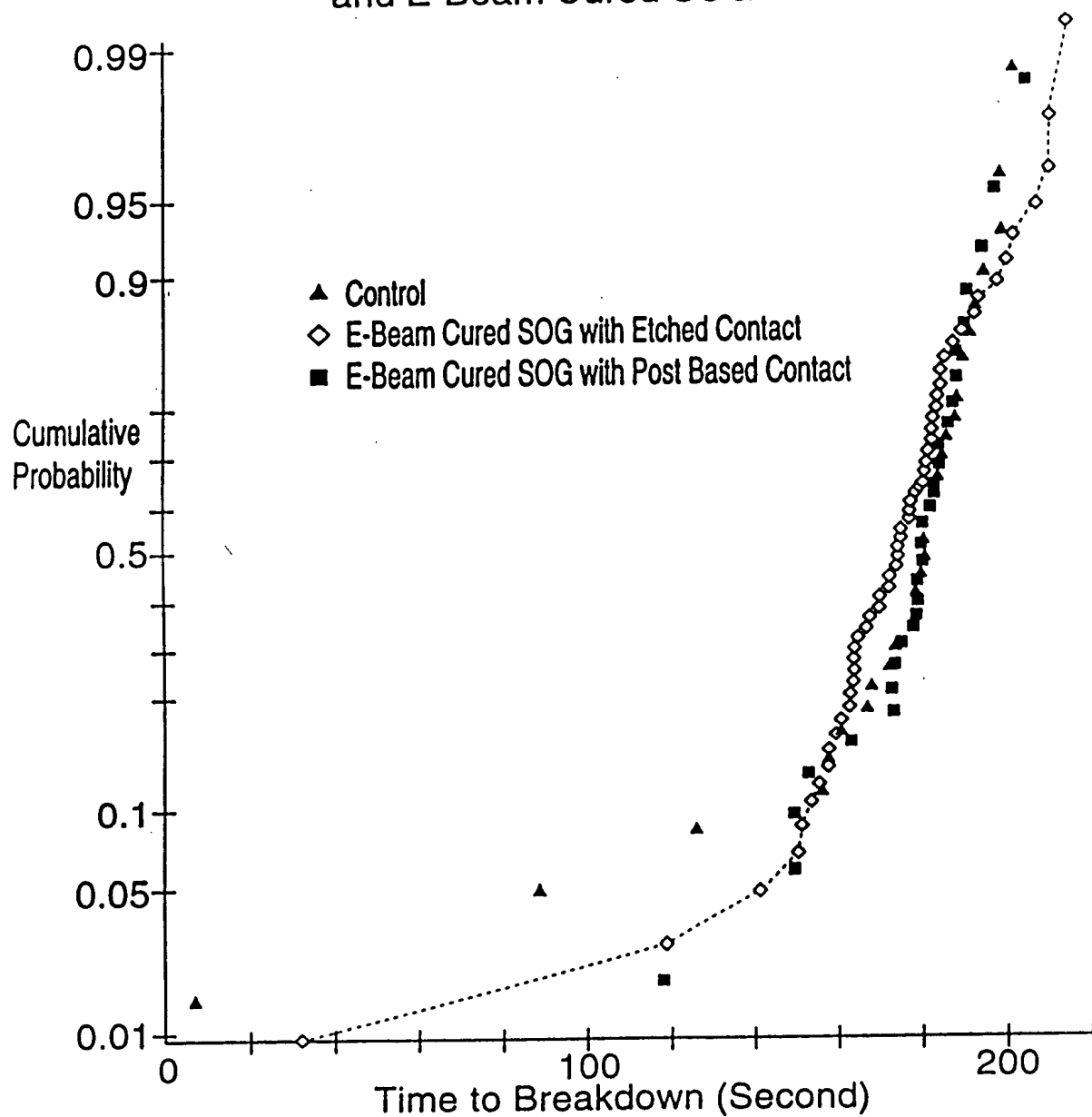


FIG. 13 SIMS Profile Analysis

